



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,454	01/21/2004	Sung-Wook Lee	P-0645	1387
34610	7590	03/04/2005	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			WILSON, SCOTT R	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 03/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,454

Applicant(s)

LEE, SUNG-WOOK

Examiner

Scott R. Wilson

Art Unit

2826



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 35-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4 and 35-40 is/are allowed.
- 6) ☒ Claim(s) 41-51 and 53 is/are rejected.
- 7) ☒ Claim(s) 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Specification***

Claims 41 and 48 are objected to because of the following informalities: Claim 41 recites P_2O_5 , but claim 48 recites P_2O_3 . The specification also recites P_2O_5 (page 8, line 23) and P_2O_3 (page 11, line 1). Appropriate correction is required. Since the prior art refers to P_2O_5 , this compound will be taken to be the claimed compound.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in-
 - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
 - (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 51 and 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Hachitani. As to claim 51, Hachitani discloses a method for fabricating a front substrate of a plasma display panel (PDP) (col. 27, lines 54-55) composing: forming glass powder (glass matrix 2) with a colorant added therein at a prescribed rate, wherein the colorant is Co_2O_3 (col. 24, lines 55-60), forming a dielectric paste by mixing the glass powder, a binder and a solvent, and wherein the glass powder is $P_2O_5-B_2O_3-ZnO$ (col. 23, lines 19-21), coating the dielectric paste at the entire surface of the upper glass substrate with a transparent electrode and a bus electrode formed thereon to form a dielectric paste layer; and firing the dielectric paste layer.

As to claim 53, Hachitani discloses (col. 10, line 65) that the percentage composition of Co_2O_3 may be 0.1%.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Onoda et al. and further in view of Tanabe et al.. As to claim 41, Lee in view of Onoda et al. discloses a plasma display panel comprising a front substrate, an upper dielectric layer on the front substrate, and a colorant, wherein the colorant is either Nd_2O_3 or CoO . Lee in view of Onoda et al. does not disclose expressly the upper dielectric layer formed from P_2O_5 - B_2O_3 - ZnO based glass. Tanabe et al. discloses (col. 2, lines 60-66) a front substrate for a plasma display panel comprising P_2O_5 - B_2O_3 - ZnO based glass. Also, Lee discloses (paragraph 0031) that the colorant, which may be Nd_2O_3 and CoO is added in the range of 0 to 30 wt %. At the time of invention, it would have been obvious to a person of ordinary skill in the art to form the glass of Lee in view of Onoda et al. with the composition of Tanabe et al.. The motivation for doing so would have been to have a thermal expansion coefficient which satisfies a predetermined relation with the glass substrate (Tanabe et al., col. 2, lines 40-56). Therefore, it would have been obvious to combine Tanabe et al. with Lee in view of Onoda et al. to obtain the invention as specified in claim 41.

As to claim 42, Tanabe et al., (col. 2, lines 59-66) discloses that the percentage composition of P_2O_5 is 25%-45%, ZnO is 0%-50%, and B_2O_3 is 0%-10%.

As to claim 43, Lee discloses Nd_2O_3 or CoO as colorants.

As to claim 44, Lee discloses (paragraph 0031) that the colorant, which may be Nd_2O_3 and CoO is added in the range of 0 to 30 wt %.

Art Unit: 2826

Claims 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Onoda et al.. As to claim 45, Lee, Figure 2A, discloses (paragraphs 0028 and 0029) the front substrate of a plasma display panel (PDP) including a colorant-added upper dielectric layer. Lee further discloses (paragraph 0031) that the colorant may be Nd_2O_3 . Lee does not disclose expressly the parent glass formed from $\text{PbO-B}_2\text{O}_3\text{-SiO}_2\text{-Al}_2\text{O}_3\text{-MgO}$ based glass. Onoda et al. discloses (col. 1, lines 37-39) a front substrate for a plasma display panel comprising $\text{PbO-B}_2\text{O}_3\text{-SiO}_2\text{-Al}_2\text{O}_3\text{-MgO}$ based glass. At the time of invention, it would have been obvious to a person of ordinary skill in the art to form the glass of Lee with the composition of Onoda et al.. The motivation for doing so would have been to have a thermal expansion coefficient which satisfies a predetermined relation with the glass substrate (Onoda et al., col. 1, lines 21-23). Therefore, it would have been obvious to combine Onoda et al. with Lee to obtain the invention as specified in claim 45.

As to claim 46, the percentage composition of $\text{P}_2\text{O}_5\text{-B}_2\text{O}_3\text{-ZnO}$ is moot, since Onoda et al. reads on the $\text{PbO-B}_2\text{O}_3\text{-SiO}_2\text{-Al}_2\text{O}_3\text{-MgO}$ glass composition.

As to claim 47, the percentage composition of Co_2O_3 is moot, since Lee reads on the Nd_2O_3 colorant.

Claims 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Onoda et al. and further in view of Tanabe et al.. As to claim 48, Lee in view of Onoda et al. discloses a plasma display panel comprising a front substrate, an upper dielectric layer on the front substrate, and a colorant, wherein the colorant is either Nd_2O_3 or CoO . Lee in view of Onoda et al. does not disclose expressly the upper dielectric layer formed from $\text{P}_2\text{O}_5\text{-B}_2\text{O}_3\text{-ZnO}$ based glass. Tanabe et al. discloses (col. 2, lines 60-66) a front substrate for a plasma display panel comprising $\text{P}_2\text{O}_5\text{-B}_2\text{O}_3\text{-ZnO}$ based glass. Also, Lee discloses (paragraph 0031) that the colorant, which may be Nd_2O_3 and CoO is added in the range of 0 to 30 wt %. At the time of invention, it would have been obvious to a person of ordinary skill in the art to form the glass of Lee in view of Onoda et al. with the composition of Tanabe et al.. The motivation for doing so would have been to have a thermal expansion coefficient which satisfies a predetermined relation with the glass substrate (Tanabe et al., col. 2, lines 40-56). Therefore, it would

Art Unit: 2826

have been obvious to combine Tanabe et al. with Lee in view of Onoda et al. to obtain the invention as specified in claim 48.

As to claim 49, Tanabe et al., (col. 2, lines 59-66) discloses that the percentage composition of P_2O_5 is 25%-45%, ZnO is 0%-50%, and B_2O_3 is 0%-10%.

As to claim 50, the percentage composition of Co_2O_3 is moot, since Lee reads on the Nd_2O_3 colorant.

Allowable Subject Matter

Claims 1, 2, 4 and 35-40 are allowed. The closest prior art is Takeishi et al. (US Pat. 6,797,413), in which the colorant Co_2O_3 (col. 4, line 7) is used in a lower dielectric layer, formed below the light emitting layer, in contrast with applicants upper dielectric layer.

Claim 52 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. No prior art discloses the claimed method which includes Co_2O_3 and P_2O_5 - B_2O_3 - ZnO based glass of the claimed composition.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2826

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott R. Wilson whose telephone number is 571-272-1925. The examiner can normally be reached on M-F 8:30 - 4:30 Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

srw
February 23, 2005

TECHNOLOGY CENTER 2800
SUPERVISORY PATENT EXAMINER
NATHAN J. FLYNN

